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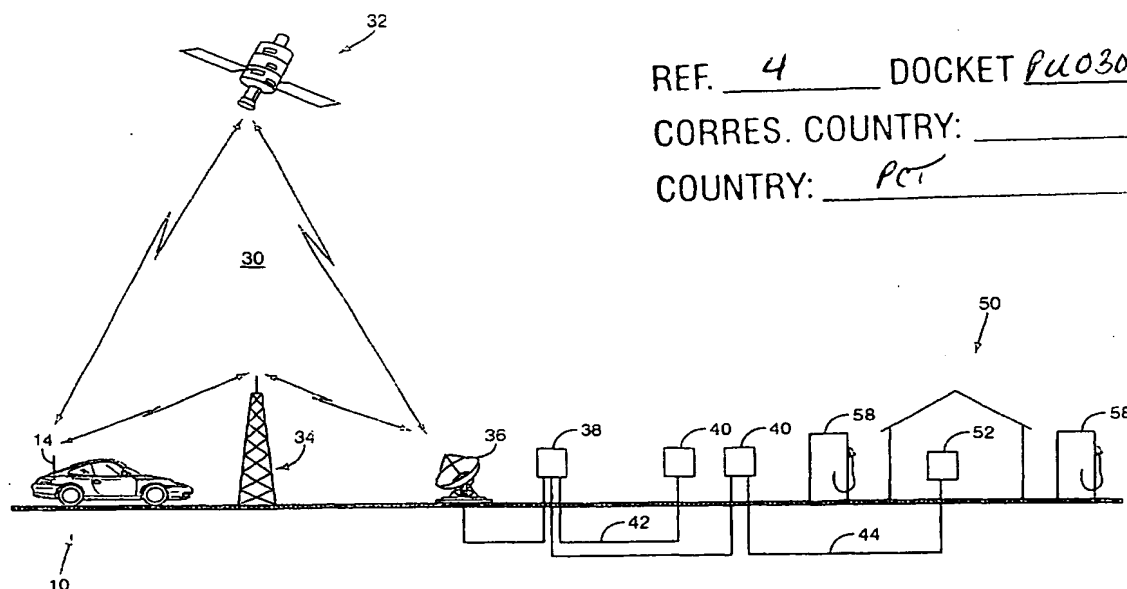
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(54) Title: **MULTI STAGE DATA PURCHASE**



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(57) Abstract: A multistage information purchasing system comprises a vehicle (10) onboard computer (12) configured to arrange for the purchase of information through a wireless communications network (30). The vendor from whom the information has been purchased indicates a proximate docking station (50) from which the purchased information is available and the vehicle is directed to that docking station. At the docking station, the consumer downloads the purchased information to the onboard computer (12) for later manipulation or use. Alternatively, the consumer may abort the transaction if it is inconvenient to travel to the docking station.



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MULTI STAGE DATA PURCHASE

The present invention relates to a system and method enabling consumers to purchase data, information or music for example, from their vehicle while travelling and
5 to subsequently retrieve the information so purchased at a docking station such as a fuelling environment.

Networked computers have created and provided the Internet, and more specifically, the World Wide Web. Networked computers have also allowed people to
10 purchase items or information such as hotel reservations, airline tickets and the like from the convenience of their home or office computer.

However, networked computers normally must have a phone line or equivalent physical link to access desired information. While cellular phones, wireless modems, and
15 other wireless devices are proliferating and seemingly eliminating the need for the physical link, presently bandwidth limitations preclude such devices from being truly effective information gathering devices. That is, downloading a large quantity of information requires an extended amount of time, and since most cellular customers pay for each minute, the cost associated with these lengthy downloads rapidly becomes prohibitive.
20 Higher bandwidth through cellular service, if available, is also more expensive, although the transmission times may be reduced.

Internet capable fuel dispenser now allow consumers to remain connected to the Internet whilst fuelling their vehicle. Additionally, a family of patents to Smith exists, such as U.S. patents 5,914,654 and 5,806,018, which are incorporated by reference, that teach techniques of allowing consumers to purchase information through a fuel dispenser.

- 5 Specifically, Smith contemplates the existence of effective onboard computers that may receive information through the fuel dispensers for manipulation by the consumer from within the vehicle. However, Smith teaches that the information may be purchased only at the fuel dispenser and delivered therefrom. This requires that the consumer select, purchase, and receive the information during a single visit to the fuelling environment.
- 10 This may result in inefficient use of time at the fuelling environment. Furthermore, the type of information available for purchase is limited by the resources available to the fuel dispenser. That is, if the fuel dispenser only has access to certain resources, the consumer may only purchase information from those certain resources.

- 15 According to a first aspect of the present invention there is provided a system for selling data to a consumer, the system comprising:

a consumer interface adapted to receive an order for data

a docking station at a location normally remote from the user interface

control means for making the ordered data available to the consumer at the docking

- 20 station.

According to a second aspect of the present invention there is provided a method for selling information, comprising:

accepting an order from a consumer positioned at a first location;

informing the consumer of a docking station at a second location from which the information can be retrieved;

correlating the information to the consumer at the docking station; and

delivering the information to the consumer at the docking station.

5

The present invention assists information consumers in purchasing desired information while promoting the efficient use of the consumers' time during the transaction. Specifically, a consumer may locate desired information and purchase the information through an onboard computer over a wireless network. However, to conserve
10 bandwidth on the wireless network, the consumer is directed to the closest docking station at which the consumer may download or access the information. This may be coupled with detailed instructions on how to reach the closest docking station such as may be accomplished with onboard navigation aids. Additionally, if the consumer decides that it is too inconvenient to reach the designated docking station, the consumer may abort the
15 transaction and receive a refund or credit to the financial account from which the purchase was authorised.

In a preferred embodiment, the docking station is a fuelling environment that the consumer may be inclined to visit independently of the information transaction. This may
20 prompt the consumer to choose a fuelling environment with a docking station over a fuelling station without a docking station to receive the purchased information. In this manner, fuelling environments and their forecourt devices that act as docking stations may have a competitive edge over fuelling environments that do not. Alternate docking stations may be travel rest areas, roadside kiosks, or the like.

One embodiment of the present invention will now be described by way of example only, with reference to the accompanying figures, of which:

Figure 1 is a side elevational view of a vehicle incorporating an onboard computer
5 as may be used in the present invention;

Figure 2 is a block diagram illustrating the onboard computer of Figure 1;

Figure 3 is a schematic depiction of the fuel dispenser communications;

Figure 4 is a block diagram of a preferred docking station as used in the present invention;

10 Figure 5 shows the vehicle of Figure 1 receiving information at a terminal in the docking station of Figure 4; and

Figure 6 is a flow chart of the method of the present invention.

Referring to Figure 1, this shows a vehicle 10 equipped with an onboard computer
15 12, an antenna 14, and a receiver 16. The onboard computer 12 is operatively connected to the receiver 16. Additionally, a transmitter 18 may be operatively connected to both the onboard computer 12 and the antenna 14.

As seen in Figure 2, the onboard computer 12 includes a central processing unit 20,
20 which in turn is operatively connected to a display 22, an input device 24, a disk drive 26, and a transceiver 28, which includes both the receiver 16 and the transmitter 18. Display 22 may be a conventional video display such as is commonly found on laptop computers or it may be integrated with the input device 24 as a touchscreen or the like. Input device 24 may be a mouse, a keyboard, a joystick, or other well known input device as needed or

desired. Disk drive 26 may be any sort of drive, which accepts a portable storage medium and reads data therefrom. Thus, floppy drives, CD-ROM drives, optical drives, and the like are all within the scope of the term "disk drive." The transceiver 28 may operate in the electromagnetic spectrum, preferably in the RF range, and may operate as a cellular communications device, a conventional radio receiver, or other device as needed or desired. Additionally, the computer 12 may include a Global Positioning System (GPS) locator 29. This may be integrated with computer 12 or merely communicatively connected thereto as needed or desired.

10 It should be appreciated that the onboard computer 12 may be positioned in any number of places within the vehicle 10, and may be dispersed or integrated into a single housing as needed or desired. For example, the display 22 and the input device 24 could be positioned in the steering wheel, with the CPU 20 positioned in the trunk of the vehicle; or the entire computer 12 could be positioned on the passenger side dashboard. Onboard
15 computer 12 may be a separate unit in the vehicle 10, or it may be integrated into a vehicle component such as a radio. Additionally, the onboard computer 12 may be a laptop computer that has a hook up station within the vehicle 10, much like cellular phones have in-vehicle hands free stations. Other placements are possible and within the scope of the present invention.

20

Equipped with such an onboard computer 12, a consumer may purchase information pursuant the present invention as better shown in Figure 3. Specifically, the consumer may use the onboard computer 12 to send an information purchase request through the antenna 14 into a wireless network 30. Wireless network 30 may be a

conventional cellular network or a satellite based network or some hybrid thereof and preferably includes a satellite 32 and a base station 34 which act as relays for communications from the vehicle 10 to a network host antenna 36. Network host antenna 36 is operatively connected to a network computer 38 that communicates with remote information providing computers 40 over a land based network 42. Network computer 38 manages the network 30 and may be a MSC or the like with a Home Location Register (HLR), a Vehicle Location Register (VLR) and other supporting attributes as are well understood in the wireless communication industry. While indicated as a land based network, it is possible that the network 42 be wireless. However, given the information transfer rates desired, and the present limitations on wireless communications, this is not preferred.

Remote information providing computers 40 are connected over a second land based network 44 to a docking station 50 from which the consumer may receive information. Networks 42 and 44 may be part of the Internet, a proprietary network, or the like as needed or desired. Docking station 50 includes a site controller 52, which may act as a local server and downloads information from the remote information providing computers 40, or alternatively acts as a conduit for information from the computers 40 to pass through.

20

Docking station 50 is better understood through reference to Figure 4. In the preferred embodiment, the docking station 50 is a fuelling environment with multiple information dispensers 54 dispersed in the forecourt. While a fuelling environment is preferred, docking stations may be, roadside kiosks, other vehicle accommodating retail

establishments or the like. A full fuelling environment 50 may include a Quick Serve Restaurant 56, one or more fuel dispensers 58, a car wash 60, a convenience store 62, and perhaps a dedicated information terminal 64. Each such element within the fuelling environment 50 may include an information dispenser 54. Each information dispenser 54
5 may be communicatively coupled to the site controller 52 and through the site controller 52 to the remote information providing computers 40, such as through the network 44.

As better seen in Figure 5, an information dispenser 54 may include a control system 66 that communicates with the site controller 52 and operatively controls a
10 transceiver 68. Transceiver 68 may not be a true transceiver, but includes at a minimum a transmitter adapted to communicate with the vehicle 10 through wireless communication received by the vehicle 10 through the antenna 14. This wireless communication, because it is at relatively short distances compared to the distances involved in network 30 may have a much greater bandwidth. With the greater bandwidth, transmission times are
15 reduced and the consumer economises the time spent downloading the information.

When the consumer, and vehicle 10, first arrive in the docking station 50, the vehicle 10 must identify itself to the information dispenser 54. To this end, the onboard computer 12 may perform a radio frequency "handshake" such as that disclosed in U.S. Patent 5,956,259, which is hereby incorporated by reference. Transponders or the like may
20 be used or other equivalent technologies, such as are used in automated fuel purchasing transactions.

The data transfer may be to an intermediate device, such as a portable playback device, a portable memory device or the like.

The communication links between the respective information dispensers 54 and the site controller 52 may also be wireless, a dedicated line, a local area network, or the like. In the preferred embodiment, after the vehicle 10 has identified itself to the site controller 52 through an information dispenser 54, the site controller activates the appropriate information dispenser 54 within the docking station 50 to complete the information transfer. As further described in co-pending application _____, entitled MULTISTAGE FORECOURT DATA PURCHASE, the information may be dispensed from a plurality of information dispensers 54 as the consumer moves the vehicle 10 about the fuelling environment forecourt. To this end, the site controller 52 must keep track of whereabouts of the vehicle 10 within the docking station 10. This may be accomplished with appropriate transponder technology as disclosed in U.S. Patent 5,956,259, incorporated by reference.

In an alternative arrangement, the consumer may be issued a receipt or other indicia that indicates that the consumer has already purchased the information, but still needs to receive the information so purchased. For example, as part of the receipt from a fuelling transaction, the consumer could receive a bar code, or be provided an electronic code number that the vehicle onboard computer 12 then transmits as needed to secure an information download. While not preferred, the consumer could swipe a credit card, a smart card, or other payment means at a second information dispenser 54. The account number associated with the payment means would then act as authorisation for an information download, even though no additional financial activity took place. Rather the

account number is merely an identification mechanism that the docking station 50 can use to ensure that the appropriate person is receiving the information download.

With the components of the present invention explicated, the preferred method is explained with reference to Figure 6. Initially, a consumer decides to access and/or purchase a particular bit of information (block 100). As noted above, this information may be an airline ticket, a hotel reservation, other travel arrangements, travel information, weather information, music, video, movies, software such as games, MP3 or like equivalents of audio books, as needed or desired by the consumer. As the sources of information continue to proliferate on the World Wide Web, so to will the types of information that consumers desire to purchase. Thus, information as used herein is meant to be construed broadly. The consumer orders the desired information through a wireless device in the vehicle 10 (block 102). This may be the onboard computer 12 or other comparable device, and may be done over wireless network 30.

15

Typically, it will be inefficient to use the network 30 to deliver the purchased information because of bandwidth concerns. However, payment authorisation may be done through the network 30 (block 104). Payment authorisation may be prepaid and debited from the account, by a credit card account or similar. That is, as part of the information purchase request, the wireless device, such as the onboard computer 12, communicates payment account information, such as a credit card number. Appropriate communications take place to secure payment as is well understood in the art.

Meanwhile, the network computer 38 proceeds to locate the purchased information on the remote information providing computers 40 (block 106). Additionally, the network host computer 38 may act as the "intelligence" of the transaction and work to accept the information order and secure payment authorisation, or the network host computer 38 can
5 act as a conduit to an e-commerce provider as needed or desired. The remote information providing computers 40 will have a list of authorised docking stations 50 at which the consumer may receive delivery of the purchased information. This may be comparable to a Neighbour List in cellular phone technology. From this list, or comparable information, the decision will be made, either by the network computer 38 or the remote information
10 providing computer 40, as to which is an appropriate docking station 50 and where it is located (block 108). Alternately, a list of a few alternate docking stations 50 may be provided, with the consumer selecting the desired location either through a prompted response or by showing up at one of the indicated docking stations 50.

15 It may be desirable from a vendor point of view to provide the docking station information only after payment is secured. The onboard computer 12 may additionally send positional location such as is provided by a Global Positioning System (GPS) 29. From this information, the computer deciding which docking station 50 is appropriate may make a more informed decision. Additionally, consumer preferences may be indicated and
20 taken into account in deciding what docking station 50 the consumer is informed of (block 110). For example, the consumer may have indicated a preference for a certain brand of docking station 50, such as BP, SHELL, or EXXON. Such consumer preferences may also take the form of certain types of docking stations 50. For example, the consumer may prefer to receive information from a docking station 50 that is compatible with a particular

type of network 30 or that the consumer already has an established account with. In the preferred embodiment, such preference predefined by the consumer are stored in the onboard computer 12 and transmitted by the transmitter 18 during a purchase before the network 30 sends back the particular docking station 50 for the consumer to retrieve
5 purchased information. In an alternative embodiment, the preferences may be entered into the onboard computer 12 by the consumer at the time of purchase either at the consumer's own initiative or by query from the network 30 if such feature is provided by the network 30.

10 As part of informing the consumer of the nearest appropriate docking station 50 (block 110), the consumer may additionally be provided with directions thereto (block 112). Many GPSs are integrating maps and directional aids that would be useful for this purpose. The consumer must then decide whether to proceed with the transaction (block 114). If the answer is no, then the transaction may be cancelled, and the consumer receive
15 a refund to her payment account (block 116).

If the consumer decides to proceed with a transaction, the consumer travels to the indicated docking station 50 (block 118). It is possible that payment accounting could be done at this point rather than prior to providing directions to the docking station 50. In this
20 manner, the information purchase could potentially be integrated into another transaction or more conveniently performed without the risk of a credit card number being compromised over the cellular network.

At the docking station the consumer may approach an information dispenser 54, such as a fuel dispenser 58 and download the information to the onboard computer 12 (block 120), or the consumer could pick up a portable storage medium such as a disk with the information contained thereon, or provide a portable storage device or portable playback device. In the event that the information dispenser provides a disk, the disk would have been purposefully prepared with the customised ordered information in the time it took for the consumer to travel to the docking station 50.

To prevent excessive demands on the memory at the docking station 50, there may be a time limit imposed on the consumer to retrieve the information. Thus, for example, the information may be deleted after six hours regardless of whether the information has been retrieved.

Also there are permutations on the technique used to select an appropriate docking station 50. The docking station 50 may be selected by the type of information ordered. That is, only certain docking stations 50 may be able to provide the type of information ordered, so the consumer is directed to only those docking stations 50. Alternatively, if any docking station 50 can provide the consumer with the ordered information, then the closest docking station 50 may be indicated. Still further, docking stations 50 may form alliances similar to ATMs, and have brand names like HONOR, PLUS, CIRRUS, MAC, PULSE, AFFN, or the like. The consumer may only be able to use a subset of the total number of docking stations 50, and thus the directions provided are to one of the approved docking station 50. Yet further, the consumer may indicate a preference for a particular type of docking station 50. For example, if the consumer owns BP stock and wishes to

patronise BP docking stations 50, the directions may indicate the closest BP docking station 50, even though that is not the closest available docking station 50.

An alternate methodology is presented in Figure 7. In contrast to the method of Figure 6, wherein the consumer was alerted to potential docking stations 50, the consumer in the alternate methodology arrives at a docking station 50, informs the docking station of her arrival, and then proceeds to download the purchased information. Turning now to Figure 7, the consumer decides that she needs information (block 200). The consumer orders the information through a wireless device within the vehicle 10, such as the onboard computer 12 (block 202). This is done over the wireless network 30. As discussed above, some computer authorises payment (block 204) and secures the desired information.

Meanwhile the consumer travels to a docking station 50 (block 206). This may be the next encountered docking station 50, or the closest one with which the consumer is familiar or the like. In contrast to the previous methodology, the consumer arrives at the docking station 50 without prompting by the information provider. At the docking station 50, the consumer identifies herself as the purchaser of the information (block 208). This may be done with a "handshake" or other appropriate identifying information. The identifying information may be provided by the remote information providing computers 40 or other computer as needed. The identifying information may be provided to the information dispenser 54 or to the site controller 52 or the like as needed or desired, but the docking station 50 then retrieves the information over a high speed communications link (block 210) such as a T-1 or T-3 line. The consumer then receives the ordered information (block 214) in any of the aforescribed techniques or their equivalents.

It should be appreciated that this alternate methodology results in some delay before the information may be transferred to the consumer, however, this may be undetectable if an appropriate high speed communications link is in place. This allows the consumer to
5 select a desired docking station, such as one they are previously familiar with, and arrive at their convenience rather than at the instruction of a third party or computer.

The present invention may, of course, be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the
10 invention. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the scope of the appended claims are intended to be embraced therein.

CLAIMS

1. A system for selling data to a consumer, the system comprising:
a consumer interface (22, 24) adapted to receive an order for data;
a docking station (50) at a location normally remote from the user interface; and
control means (38) for making the ordered data available to the consumer at the docking station (50).
2. The system of claim 1 comprising a wireless network (30) over which an order is received from the consumer interface.
3. The system of claim 1 or 2 wherein the consumer interface (22, 24) is a portable device.
4. The system of claim 1 or 2 wherein the consumer interface (22, 24) is an onboard device in a vehicle (10).
5. The system of claim 4 wherein the consumer interface is adapted to be operated in a vehicle (10).
6. The system of any preceding claim wherein the control means (38) on receiving an order from a consumer interface is adapted to cause the consumer to be provided with directions to a docking station from which the ordered data can be retrieved.

7. The system of any preceding claim wherein the control means (38) on receiving an order from a consumer interface is adapted to advise the consumer from which docking station (50), or stations, the data can be retrieved.
8. The system of claim 6 or 7 wherein the control means (38) receives location information relating to the location at which the order was initiated and selects a docking station in dependence thereon.
9. The system of claim 6, 7 or 8, wherein the control means (38) is adapted to select a docking station or stations in dependence on the type of data ordered.
10. The system of claim 6, 7, 8 or 9 wherein the control means (38) is adapted to select a docking station in dependence on consumer preferences.
11. The system of any one of claims 1 to 6 wherein the interface is adapted to receive an indication from the consumer as to the docking station (50) from which they desire to retrieve data, the control means (38) being adapted to receive that information and make the ordered data available at the desired docking station.
12. The system of claim 11 comprising a consumer interface located in a vehicle (10) having a computer (12) associated therewith configured to select a docking station from which the consumer may receive the ordered data.

13. The system of any preceding claim wherein the control means causes ordered data to be retrieved from a computer remote from the docking station and made available at the docking station (50).
14. The system of any preceding claim wherein the ordered data is transmitted from the docking station to a wireless receiver (16) associated with the consumer.
15. The system of claim 14 wherein transmission commences automatically when the consumers wireless receiver is within a certain proximity to the docking station (50) or where the signal strength exceeds a predetermined threshold.
16. The system of claim 14 or 15 wherein the data transmission from the docking station is conveyed over a broadband short range wireless signal which can only be received in the locality of the docking station (50).
17. The system of any preceding claim wherein the docking station downloads the ordered data to an onboard computer (12).
18. The system of any one of claims 1 to 16 comprising an intermediary device to receive the data for subsequent transmissions to a device associated with the consumer.
19. The system of any preceding claim wherein the ordered data is stored at a docking station for a predetermined period of time.

20. The system of any preceding claim wherein the docking station (50) is configured to accept a consumer identifying code and to only permit the ordered data to be delivered to the correct recipient
21. The system of any preceding claim comprising means for cancelling an order.
22. The system of any preceding claim comprising means for receiving payment, or payment authorisation at the time of ordering data.
23. The system of any one of claims 1 to 21 comprising means for receiving payment at the time of receiving the ordered data.
24. The system of claim 22 wherein the control means is adapted to provide directions to a docking station to which the ordered data is to be received only after payment has been made or authorised.
25. The system of any preceding claim wherein the docking station comprises a data dispenser (54).
26. The system of any preceding claim wherein the docking station is a vehicle fuelling environment (50).
27. The system of any preceding claim wherein a docking station comprises a plurality of data dispensers (54).

28. The system of any preceding claim wherein said docking station comprises a fuel dispenser (58) having a data dispenser arranged to download data to the consumer.

29. The system of claim 28 wherein the fuel dispenser (58) accepts payment for the ordered data.

30. A method for selling information, comprising:

- a) accepting an order from a consumer positioned at a first location;
- b) informing the consumer of a docking station at a second location from which the information can be retrieved;
- c) correlating the information to the consumer at the docking station; and
- d) delivering the information to the consumer at the docking station.

31. A system for retailing data substantially as hereinbefore described with reference to, and/or as illustrated in, one or more of the accompanying figures.

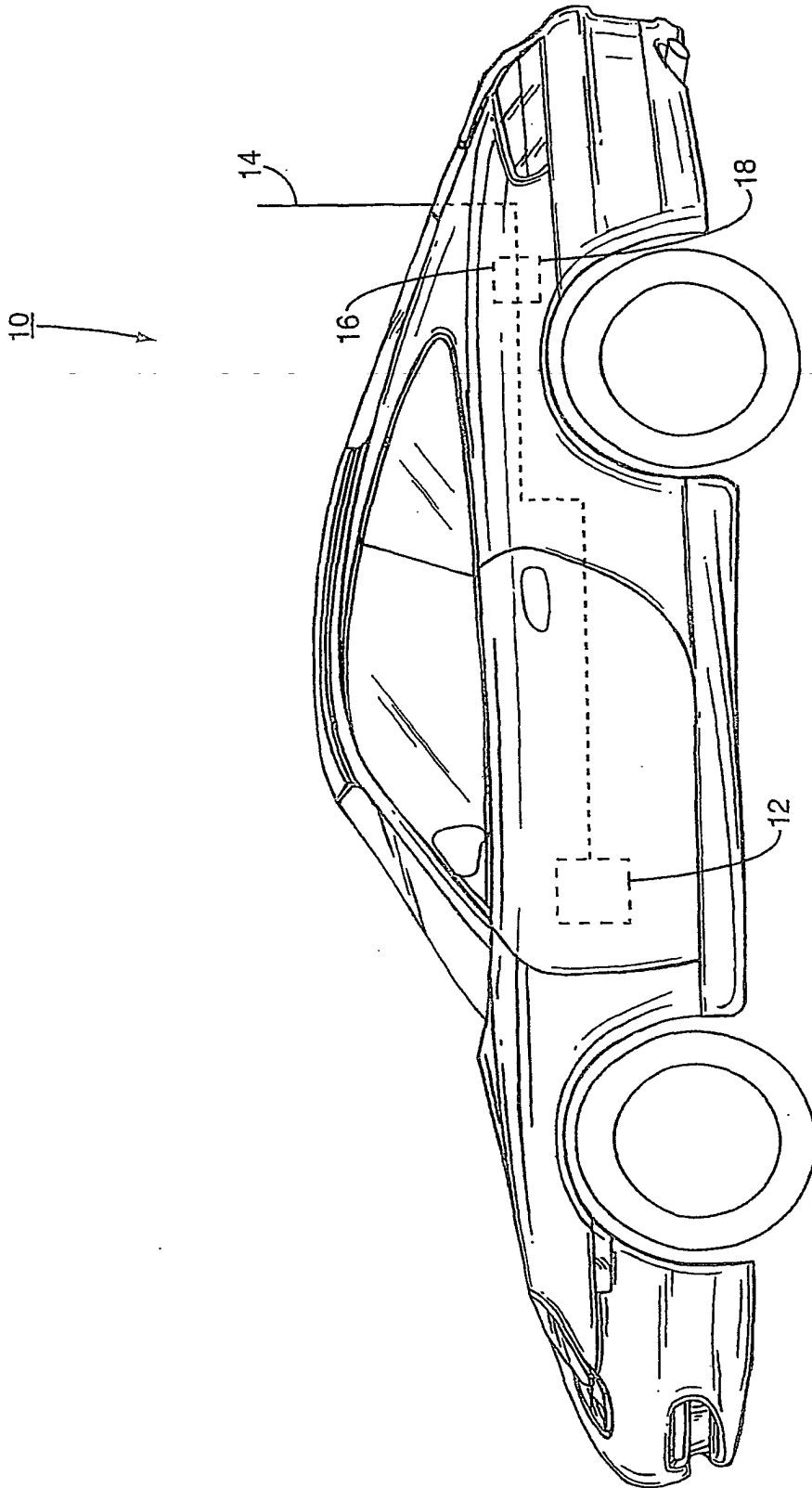


FIG. 1

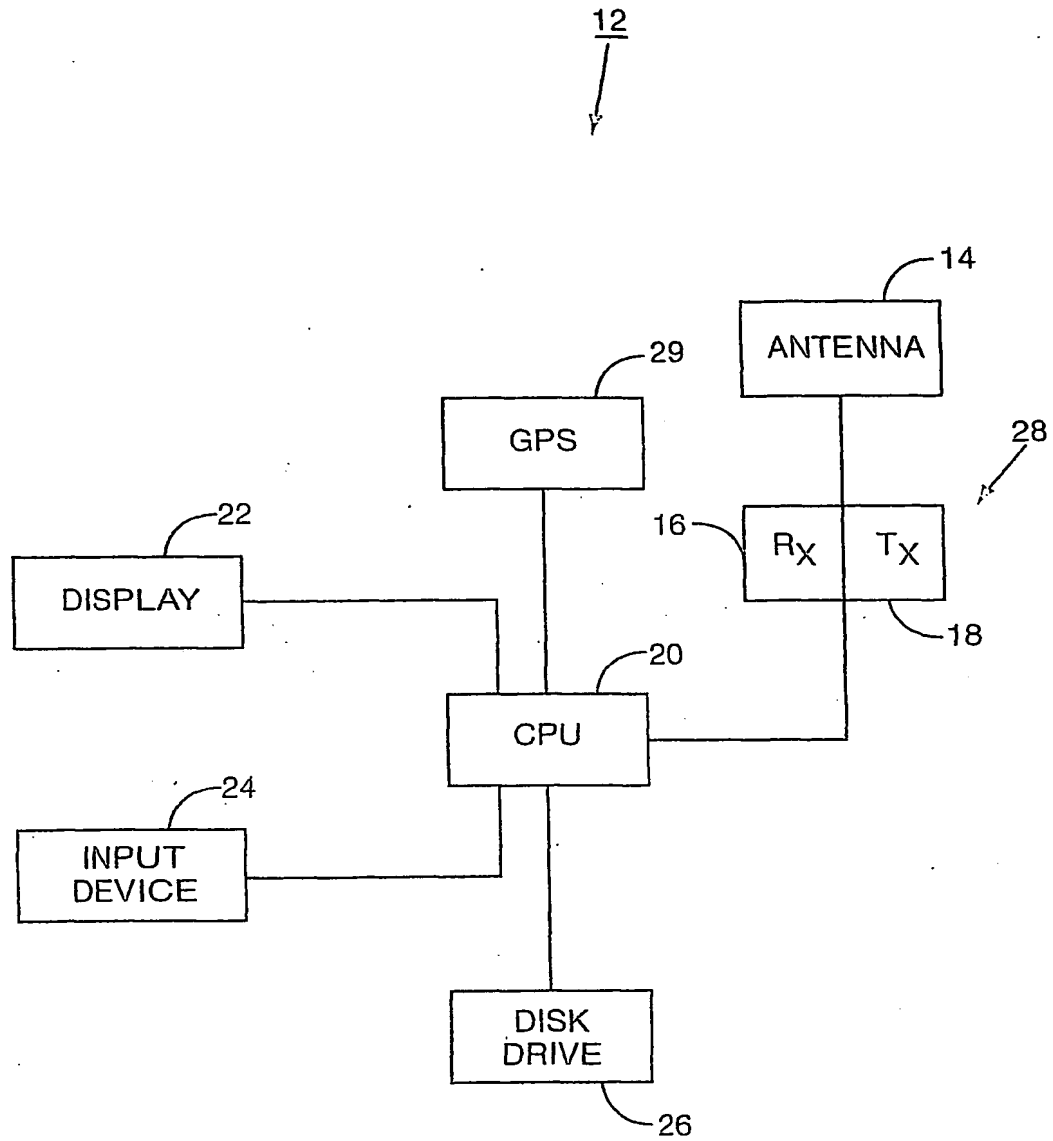


FIG. 2

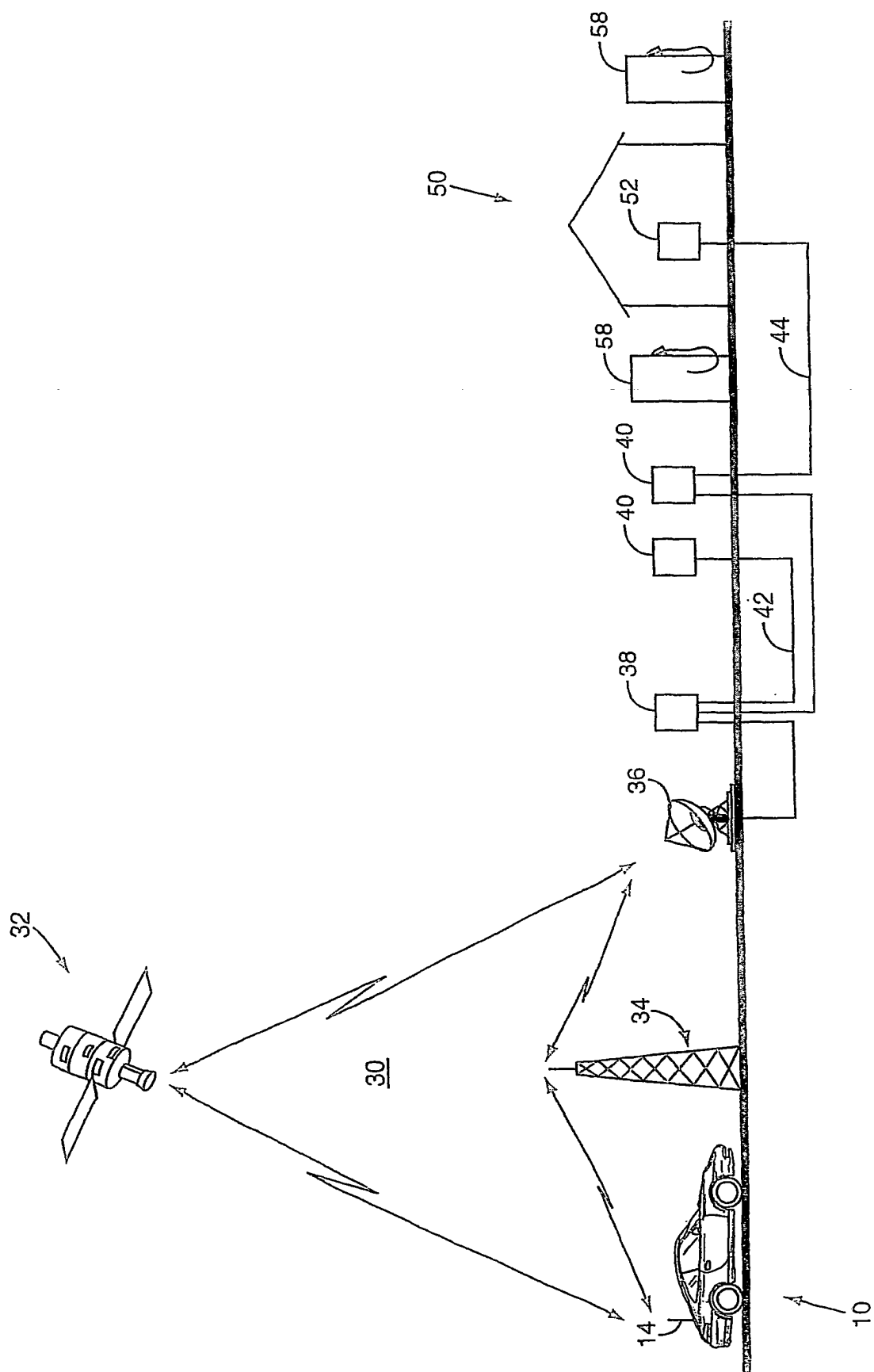


FIG. 3

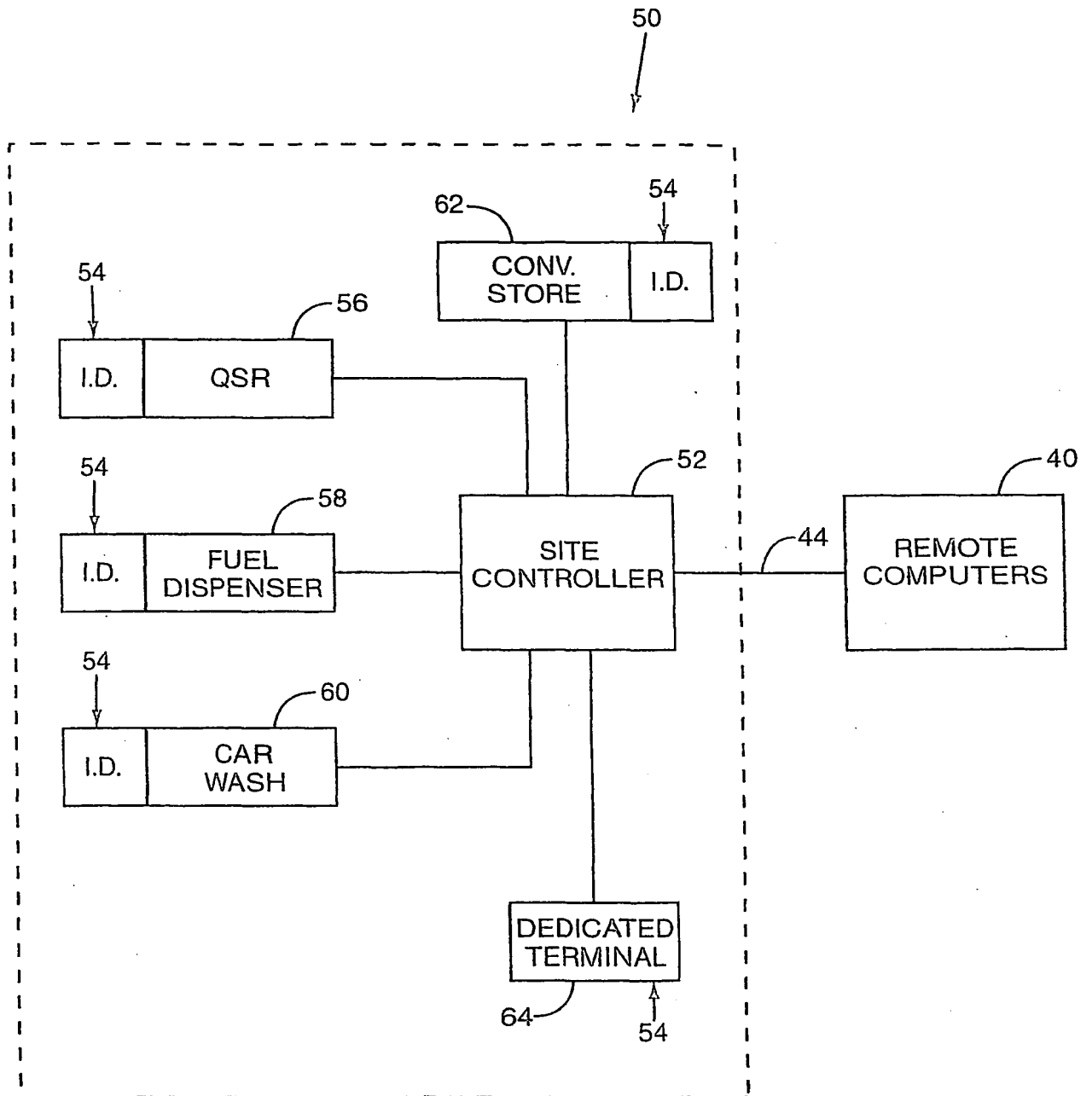
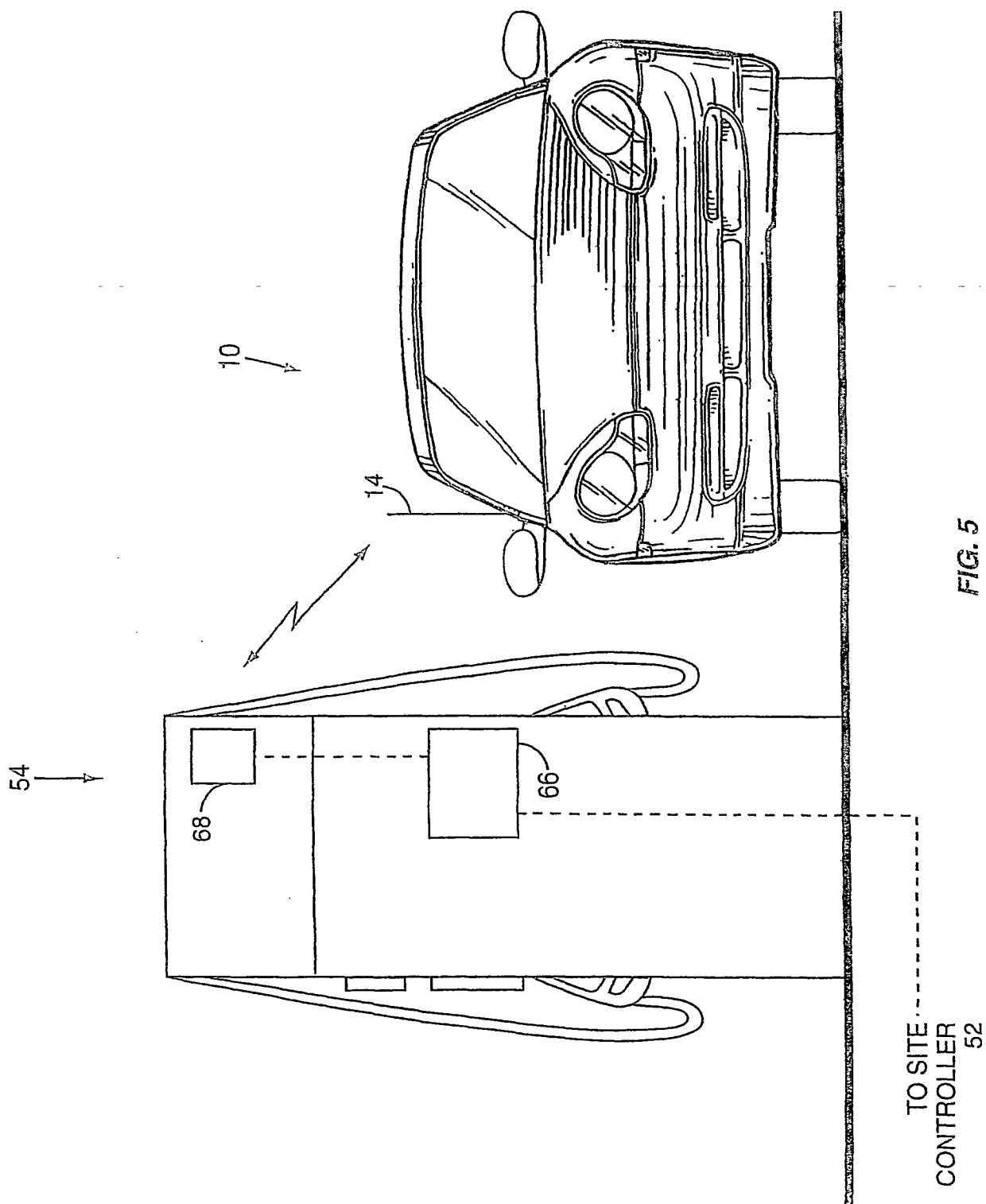


FIG. 4



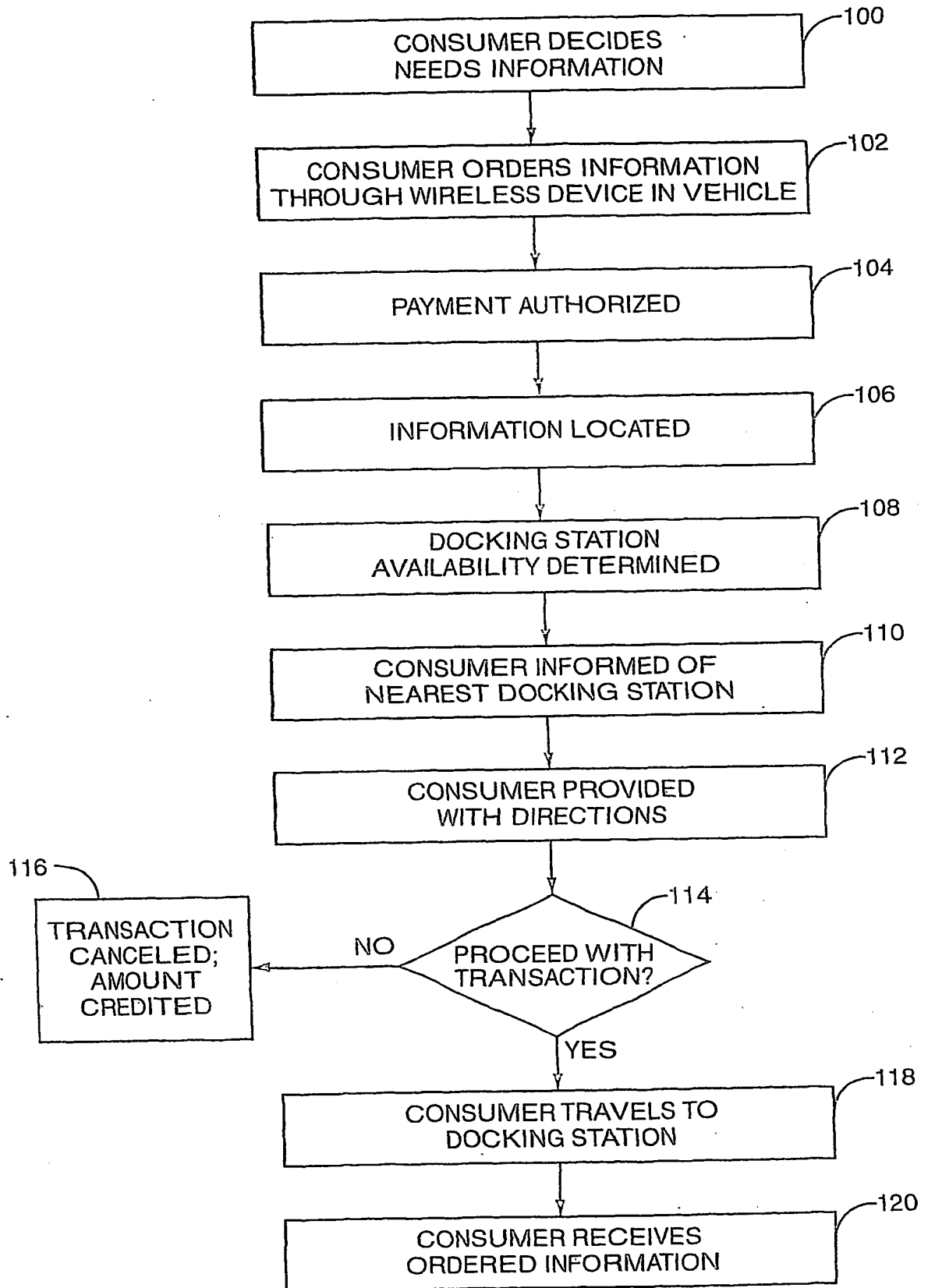


FIG. 6

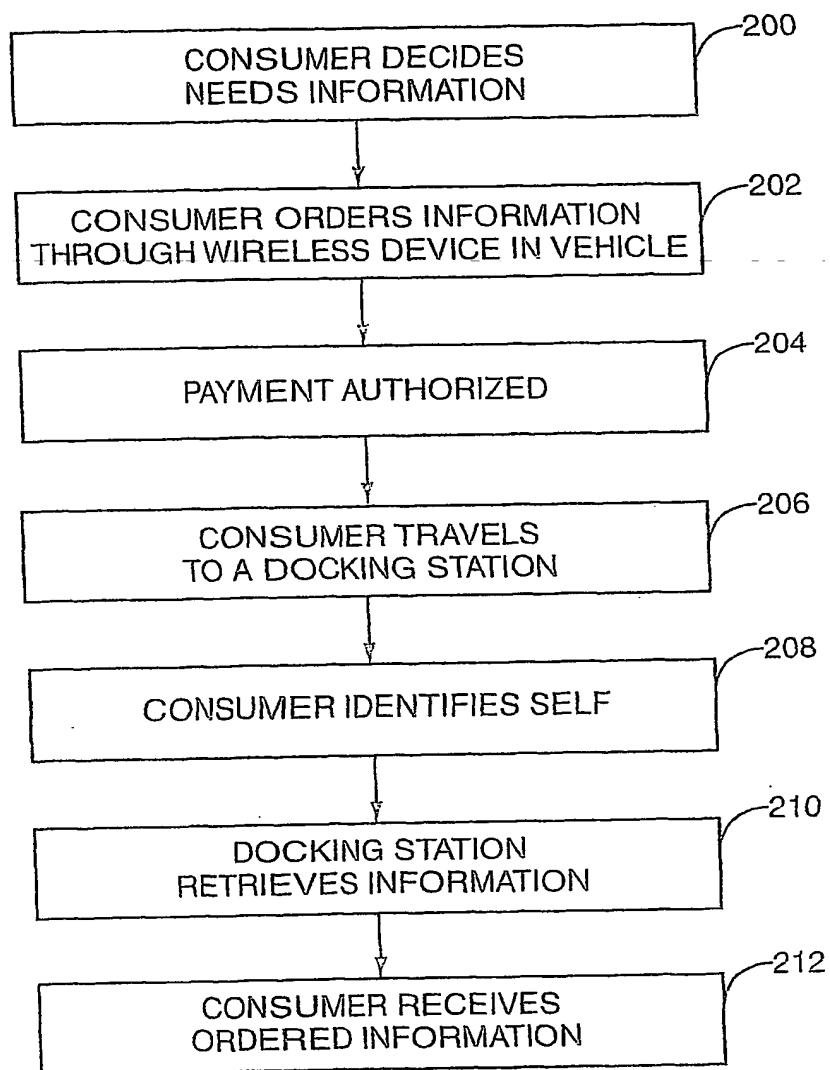


FIG. 7



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 01/00149

A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 09499 A (SMITH GOWER ; OKRAGLIK HENRY (AU); IMAGING TECH PTY LTD (AU); BROAD) 25 February 1999 (1999-02-25) page 2, line 22 - page 5, line 32 figure 1	1-31
X	WO 99 30257 A (NORTHERN TELECOM LTD ; HALL ANTHONY D (US); CRABTREE WALDEN B JR (U) 17 June 1999 (1999-06-17) abstract; figure 1 page 3, line 20 - page 4, line 5	1-31
Y	US 5 806 018 A (HARRINGTON MARK F ET AL) 8 September 1998 (1998-09-08) cited in the application column 2, line 11 - line 50 --- -/-	1-31

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

14 August 2001

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Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 01/00149

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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